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A one-stop carpal tunnel clinic

MJ REID, LA DAVID, JE NICHOLL

Department of Orthopaedics, Kent and Sussex Hospital, Maidstone and Tunbridge Wells NHS Trust, Royal Tunbridge Wells, Kent, UK

ABSTRACT

INTRODUCTION By December 2008, 90% of referrals requiring hospital admission will need to be seen and treated within the 18-week patient pathway. Previously, patients within our trust with suspected carpal tunnel syndrome had to wait 3 months to see a specialist in clinic and, once assessed, would have to wait up to a further 6 months for an open carpal tunnel decompression under local anaesthetic (OCTD/LA). We set up a one-stop clinic, where patients would have their out-patient consultation and surgery on the same day. We evaluated the clinic in order to assess whether it led to reduced waiting times whilst maintaining good clinical outcome and patient satisfaction.

PATIENTS AND METHODS Patients were selected on the basis of the standard referral letter alone. Those selected were then assessed by a single surgeon in the clinic. The patients deemed appropriate underwent an OCTD/LA and were discharged the same day. Patients were followed up with a patient satisfaction and Boston questionnaire.

RESULTS Forty-six patients underwent 63 OCTD/LA, waiting an average of 2.2 months (9 weeks) from referral. There was high patient satisfaction and improvement in symptoms following treatment in the clinic.

CONCLUSIONS We believe a one-stop carpal tunnel clinic can be an efficient and cost-effective way of treating this common condition.

KEYWORDS

Carpal tunnel syndrome – Carpal tunnel decompression

CORRESPONDENCE TO

JE Nicholl, Consultant Orthopaedic and Hand Surgeon, Kent and Sussex Hospital, Royal Tunbridge Wells, Kent TN4 8AT, UK
T: +44 (0)1892 632901; F: +44 (0)1892 632212; E: mikeyreid@doctors.org.uk

Following the NHS plan in 2000 and the NHS Improvement Plan 2005, there has been a drive at both a national and local level to produce a more patient-centred delivery of healthcare with a reduction in waiting times. This has culminated in the 18-week Patient Pathway from referral to treatment and, by December 2008, 90% of referrals requiring hospital admission should be seen and treated within this time-frame. Delivering this pathway for all conditions will result in an increased strain on the services available and achieving these targets will require optimisation of available resources with increased efficiency.

Carpal tunnel syndrome is the most common focal neuropathy with an incidence of 0.6–3.4%[1] and some studies suggest its incidence is rising.[2] Carpal tunnel decompression is the most common surgical procedure in the hand.[3,4] Previously in our trust, patients with suspected carpal tunnel syndrome had to wait up to 3 months to see a specialist in clinic and, once assessed, would have to wait up to a further 6 months for an open carpal tunnel decompression under local anaesthetic (the current gold standard treatment). Delay in treatment of this condition is debilitating, results in significant periods of lost work-days[4] and may also lead to a slow or incomplete recovery following surgery.[5]

We decided to develop a one-stop carpal tunnel clinic enabling patients with classical symptoms to have their hospital consultation and operation on the same day. The patients selected for this clinic would be selected on the basis of their referral letter alone.

The aim of this study was to assess whether a one-stop clinic would reduce waiting time for patients whilst maintaining clinical outcome and patient satisfaction.

Patients and Methods

Initial audit

We decided not to burden the referring practitioners with a proforma to complete as we felt it may be unpopular and not fully utilised. In order to assess whether or not we could accurately predict which patients would require surgery from the referral letter alone, we reviewed the referral letters for

carpal tunnel syndrome over a 6-week period. The lead clinician was blinded as to the identity of each patient and documented whether or not he felt that the patient would be listed for surgery following their out-patient consultation. Once the patient had been reviewed in the clinic and the decision made, the result was then recorded. A comparison between the two was then made.

Study design

This is a prospective, single-centre, single-surgeon, cohort study. The study was carried out in a National Health Service district general hospital from January to December 2005.

Clinic design

Patients were selected on the basis of the referral letter alone. Patients were then written to asking them to complete a Boston questionnaire and whether they were willing to have the procedure performed on the same day as their initial consultation under local anaesthetic. Those who accepted were listed for the next available one-stop clinic where six patients were booked in at 10 min intervals for an afternoon clinic. They underwent an assessment by the nurse who recorded their medical history and base-line observations. A detailed history was then taken by the consultant and the patient was examined. It is the senior author's current practice not to undertake a trial of non-surgical treatment or to offer EMG studies in those patients with clear-cut carpal tunnel symptoms but to proceed directly to carpal tunnel decompression. If carpal tunnel decompression was indicated, the patient was consented and the limb was marked. The patients were then prepared for theatre and shown into the waiting room.

Surgery

Following assessment, patients walked round to the anaesthetic room where they lay on the operating trolley. They received a local anaesthetic infiltration of 5 ml 1% lignocaine and 5 ml 0.5% bupivicaine and were then taken into the operating theatre. A standard open carpal tunnel decompression under tourniquet control was performed. The tourniquet was then deflated and haemostasis was achieved. The wound was then sutured with 5-0 Ethilon, dressed with mepore and a hand bandage applied. The patients were then taken back to the clinic on a wheelchair and were discharged when comfortable.

Follow-up

Follow-up was arranged with the general practitioner (GP) or practice nurse for removal of the sutures at 2 weeks post-operatively. A detailed discharge summary was given to the patient and a copy sent to their GP. A patient satisfaction questionnaire and postoperative Boston questionnaire were sent to the patient to be completed and returned.

Patients

Forty-nine patients attended eight clinics over a 12-month period. There were 33 GP referrals, eight rheumatology referrals, seven neurology referrals and one endocrine referral. Twenty-three patients had undergone nerve conduction studies prior to referral.

Results

Initial audit

Thirty-five referral letters for patients with suspected carpal tunnel syndrome were received over a 6-week period by the senior author. They were allocated into one of three categories – 'yes', 'maybe' and 'no' – with respect to whether they required surgery. These patients were subsequently seen in the out-patient clinic, and the outcome of their consultation recorded. There was a 78% success rate in correctly predicting those who would require surgery. These results were sufficiently encouraging to proceed with the one-stop clinic.

One-stop clinic

The study included 15 male and 34 female patients with a mean age of 52 years (range, 30–80 years). Three patients did not undergo surgery: one patient's symptoms had improved; one patient had De Quervain's tenosynovitis and was given a corticosteroid injection in the clinic; and one patient had non-specific wrist pain. This resulted in 96% accuracy in diagnosis from the referral letter alone and 94% accuracy in those who would require surgery. The remaining 46 patients then underwent 63 carpal tunnel decompressions (17 bilateral) of which 41 were right and 21 were left. This averaged 7.88 procedures (range, 6–9) from 6 or 7 new patient consultations per clinic.

Patients waited a mean of 2.2 months (9 weeks) from referral to consultation and treatment in the clinic. No patients required a day-surgery bed or in-patient admission.

Follow-up questionnaires were sent to all patients and were returned by 43 patients (3 lost to follow-up). There was a mean follow up of 10 months (range, 6–18 months).

Table 1 illustrates the Boston questionnaire scores, both pre- and postoperatively, in addition to the overall improvement. These results were in line with other studies previously published.[1,6–9] Although two patients had a fractionally poorer functional score, the remainder all had better scores; however, all patients improved with regard to the symptom score and total score with a mean improvement of 3.411 ± 1.438, overall.

Patient satisfaction was high from the 43 questionnaires (93.5%) that were returned. All of the patients felt that they were given enough notice before the surgery and none felt that they would have liked more time between the consultation and operation. All the patients felt that they were

Table 1 Boston questionnaire pre- and postoperatively and improvement in score

	Pre-operative		Postoperative		Improvement	
	Mean ± SD	Range	Mean ± SD	Range	Mean ± SD	Range
Symptom score	3.158 ± 0.634	1.909–4.727	1.108 ± 0.191	1–2	2.016 ± 0.69	0.909–3.727
Function score	2.46 ± 0.866	1–5	1.097 ± 0.2	1–2	1.353 ± 0.877	–0.125–4
Total score	5.618 ± 1.367	3.364–9.364	2.205 ± 0.323	2–3.239	3.411 ± 1.438	1.148–7.363

given adequate information concerning what the operation involved and the potential complications but 4 (9.3%) felt that they had to wait too long between consultation and discharge, although the longest a patient would have to wait from their appointment time to discharge is about 3 h. Forty-one patients (95.35%) were happy that the procedure was done under local anaesthetic and 39 (90.7%) felt that they were given adequate information following discharge. The patients were asked how satisfied they were with the treatment on a scale of 1 to 5 (1 very dissatisfied; 2 dissatisfied; 3 moderately satisfied; 4 satisfied; 5 very satisfied) and a mean score of 4.60 ± 0.54 (range, 3–5) was recorded indicating that all patients were at least moderately satisfied with a high level of satisfaction overall. When asked how their symptoms had changed on a similar scale 1 to 5 (1 completely resolved; 2 good improvement; 3 slight improvement; 4 no change; 5 worse) patients recorded a mean score of 1.56 ± 0.67 (range, 1–3) indicating that all patients had had at least a slight improvement in symptoms with most having a good to complete resolution of symptoms. Forty-one patients (95.35%) would recommend the one-stop clinic to a friend or relative if they had the same condition.

Nine patients (20.9%) had to attend their GP for reasons other than simply for removal of sutures. Three patients (7%) had to attend due to minor scar problems which settled with no further treatment. Three patients (7%) could not recall why they had been to the GP but had no problems currently. One patient (2.3%), a diabetic, had a wound infection which settled with antibiotics. One patient (2.3%) had a postoperative haematoma and had subsequent scar pain and one patient (2.3%) had pillar pain postoperatively. The final two patients were the only two patients who would not recommend the clinic.

Discussion

There are several other alternative treatments to the standard open carpal tunnel release either in terms of operative technique (*e.g.* endoscopic surgery), or conservative treatment (such as steroid injection or splintage) which may help to spread the burden of treatment. A recent Cochrane review, however, has not shown any benefit in undertaking any of the alternative surgical techniques[10] or alternative treatments[11] over the standard open release. There is also no evidence of long-term improvement in symptoms with local injection of corticosteroid.[15] This means that, for patients with moderate and severe symptoms of carpal tunnel syndrome, the standard open release remains the gold standard treatment.

Under the current NHS proposals, by December 2008, 90% of patients requiring elective hospital admission should have been treated within 18 weeks of referral. In those patients who have what appear to be classical symptoms of carpal tunnel syndrome, we have demonstrated that it is possible to reduce the waiting time to a mean of 9 weeks with the introduction of a one-stop clinic, which is well within this target. Previous studies have introduced diagnostic clinics where nerve conduction studies and clinical assessment took place sequentially on the same day.[13] These did reduce waiting times but patients still had to wait 23 weeks for surgery (almost 5 months longer than the mean in our study) and required a day-surgery bed. The study[13] recognised that delay in neurophysiology was a significant rate-limiting step in proceeding to surgery. In our study, 23 patients (50%) had undergone nerve conduction studies organised by the referring physician prior to being seen in our clinic and their surgery. We demonstrated an excellent improvement in Boston questionnaire score and patient satisfaction, suggesting that neurophysiology may not be required for patients with a strong clinical history and can be reserved for those where there is doubt over the diagnosis. This has a 2-fold benefit in that it reduces the burden on the neurophysiology department and it expedites the treatment of those who have the most severe symptoms. It may also have the effect of reducing long-term morbidity and preventing axonal damage[5] with the decrease in time-to-treatment.

The cost-implications for the trust and the individual patient are that the number of hospital attendances can be reduced with a one-stop clinic. The fact that they do not require a day-surgery bed further reduces the overall cost to the trust and the pressure on bed spaces.

Conclusions

We believe that a one-stop carpal tunnel clinic is a more efficient and cost-effective way of treating this common condition in a selected group of patients, with clinical outcome comparable to other reported series and a high level of patient satisfaction.

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